Connecting your Facility to Receive CPP Event Signals

The purpose of this document is to help facility managers understand the options for their site(s) to receive remote signals of upcoming CPP events. In addition to human readable pager alerts and e-mails, sites in this pilot will receive signals over the Internet that trigger automated sheds of pre-selected electric loads.

Connectivity Option A (Internet Gateway)

If all of the following are true, you should consider using Connectivity Option A (Internet Gateway) to receive remote signals of upcoming CPP events:

1) The site has a Web based user interface to the Energy Management and Control System and/or automated lighting system.

2) On site staff can surf the public Internet from computers at the site.

3) Access to staff or contractor who has computer programming skills.

If the above are all true for your site, then it is recommend that you use our software based price client template to obtain the Auto-CPP event updates. LBNL provides a software example or template. Your programmers make minor revisions to the software, as necessary to customize it for your system.

There are no firewall issues with this option because the price client software resides inside of your secure firewall. The price is returned on the standard port 80, just like viewing Web pages.

Connectivity Option B (Internet Relay)

If the above scenario doesn't work for your site, there is a second option. LBNL will provide your site with a small embedded device called an "Internet relay". The Internet relay is controlled remotely by our server. Your facilities group mounts the Internet relay near any available EMCS controller and wires into two digital inputs on the controller. When both relays are OFF, the EMCS system is in "Normal" mode. If RLY1 = ON, then "Medium" shed mode. If RLY1 AND RLY2 are both ON, then "High" shed mode.

The Internet relay needs to be plugged into a standard RJ-45 Ethernet plug (normally provided by your IT group). A public IP address* needs to be assigned to the device, but only Port 502 needs to be opened. Although commands from the LBNL server will traverse the public Internet, all public IP addresses except that of the LBNL server can be blocked. The security risk through this device is extremely low, due to the obscure port number and the unknown, non-Windows operating system used on the embedded device. More info on the Internet relay (Advantech, ADAM-6060) is provided in this link:

http://www.advantech.com.tw/products/Model_Detail.asp?model_id=1-LS7HR&PD=ADAM

*Alternately, a public static IP address and port 502 can be opened anywhere on a private WAN. Through use of a Network Address Translation (NAT) router, the ADAM-6060 device can be assigned private IP address. In this scenario, communication between the LBNL server and the ADAM-6060 device would traverse both the public Internet and a private WAN.

For connectivity questions, contact

Sila Killicote (510) 495-2615 <SKiliccote@lbl.gov> or

Dave Watson 510.486.5562 <watson@lbl.gov>